

AN UNDESCRIBED SPECIES OF
ASTRAGALUS (LEGUMINOSAE) FROM UTAH

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An examination of additional materials of *Astragalus* section DESPERATI subsection NATURITENSIS from San Juan County, Utah has demonstrated the need for re-evaluation of the specimens passing under the name *A. monumentalis* Barneby (1953, 1964). Materials included under that epithet can be segregated into two entities on the basis of differences in calyx size and shape, petal length, and pod size and shape. The species can be distinguished by the following key.

Calyx tube cylindric, 4.8-6.7 mm. long; flowers 11-17 mm. long; pods 20-25 mm. long, conspicuously arcuate.
..... *A. cottamii*.

Calyx tube campanulate, 3-3.5 mm. long; flowers 8-9 mm. long; pods 12-21 mm. long, straight to somewhat curved. *A. monumentalis*.

***Astragalus cottamii* Welsh sp. nov.**

A. *A. monumentale* differt calycis tubo longiore cylindrico, floribus longioribus, et leguminibus longioribus et curvatis magis.

Herba perennis radice palari et caudicibus ramificantibus (interdum florens tempa prima); caules 0.5-6 cm. longi, ascendentes; stipulae 2-6 mm. longae, membranaceae, amplectentes sed non connatae; folia 1.2-8 cm. longa, petiolis persistentibus, foliola (5) 9-19 (21), 2-9 mm. longa, 1-4.2 mm. lata, elliptica ad ovalia vel oblanceolata, strigulosa pilis simplicibus, saepe plicata; pedunculi 0.7-7 cm. longi; racemi 3-9 floribus, rhachidibus 0.5-2 cm. longi; bracteolae 2, minutae vel nullae; tubus calycis cylindricus, 4.8-6.7 mm. longus, strigulosus, purpureo-suffusus, dentes 1.2-2 mm. longi, subulati; flores 11-17 mm. longi, petala purpureo-rosea, vel vexillum pallens; legumina 20-25 mm. longa, 2.5-4 mm. lata, valde curvata, oblonga ad oblongo-lanceolata, triquetra, sutura ventralis prominens, dorsalis sulcata pro-

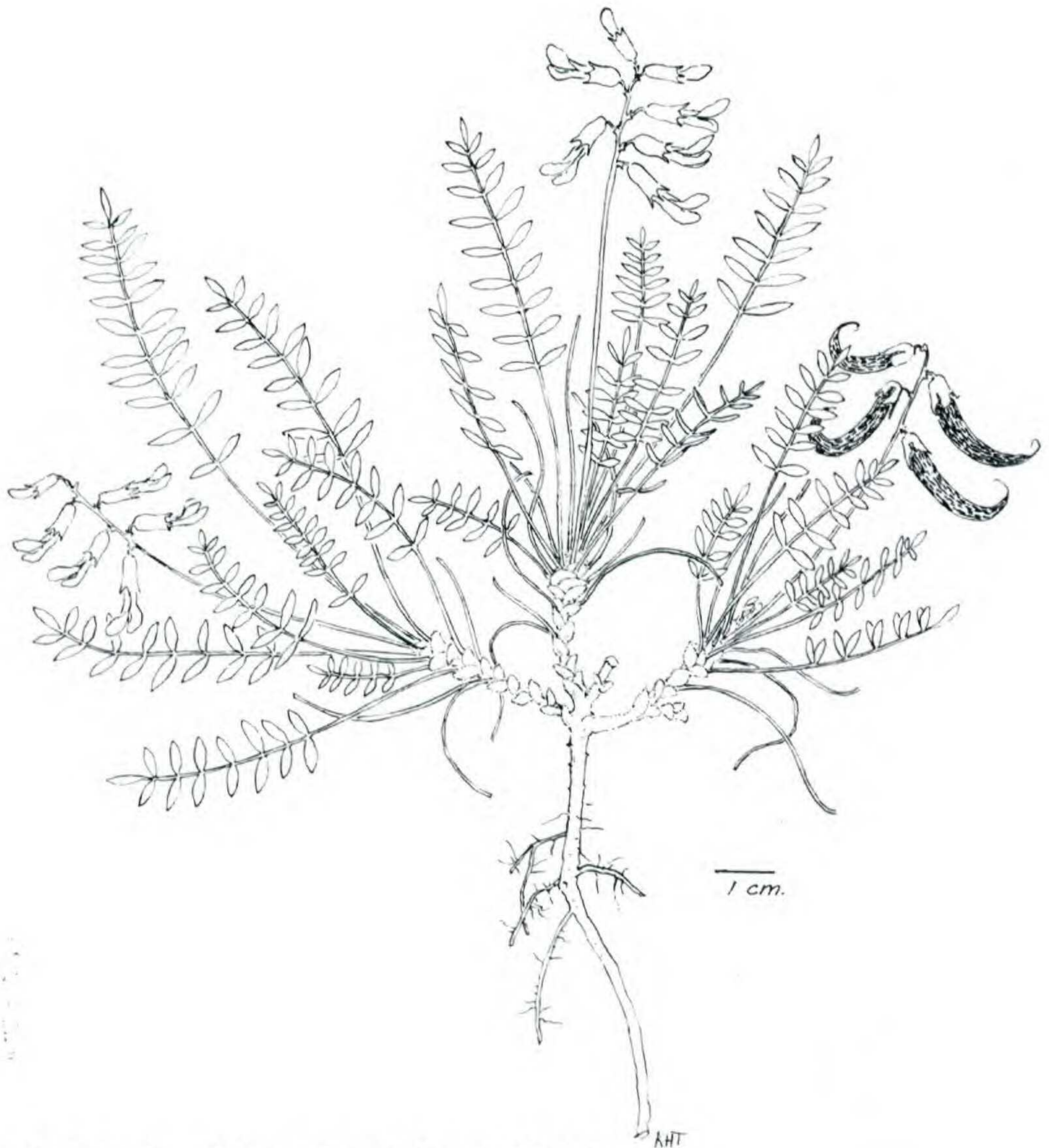


Figure 1. *Astragalus cottamii* Welsh, habit.

funde, bilocularia sutura dorsali ab intrusa, purpureo-maculata, strigulosa.

UTAH: SAN JUAN CO., ca. 4 miles east of Clay Hills Divide, *S. L. Welsh* 5207, 1 May 1966 (Holotype, BRY, Isotypes ISC, NY). Comb Ridge 16 miles west of Blanding, *R. C. Barneby* 12783, 19 May 1955 (UTC), *S. L. Welsh et al* 8931, 8 May 1969 (BRY). Natural Bridges National Monument, *S. L. Welsh* 5187, 5188, 20 April 1966, *B. F. Harrison* 5922, 7 May 1933, *S. L. Welsh et al* 8948, 9 May 1969 (BRY). Comb Wash, *S. L. Welsh et al* 8932, 8938, 9 May 1969 (BRY). Bluff, *W. P. Cottam* 5825, 29 April 1935 (BRY).

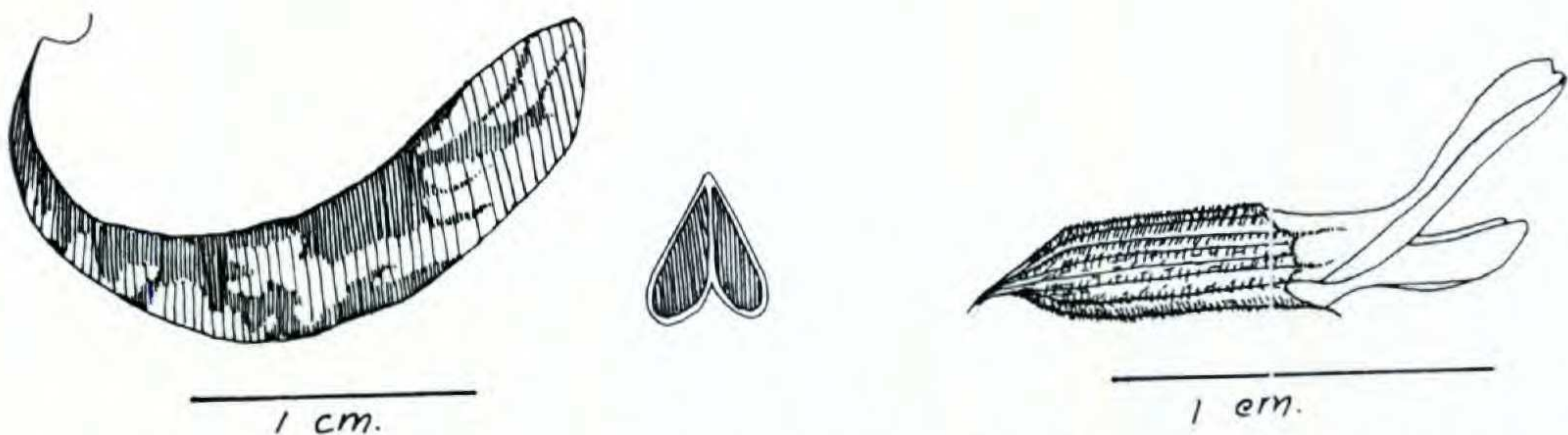


Figure 2. *Astragalus cottamii* Welsh, detail of flower and fruit.

The Cottam milk-vetch grows in sandy soil in weathered depressions and crevices on exposed rimrock and ledges of the Cedar Mesa (Permian), Kayenta (Jurassic), and Entiada (Turrassic) formations, and less commonly on sandy alluvium derived from those formations. It is known to occur from the vicinity west of Clay Hills Divide on the road to Halls Crossing north-eastward to Natural Bridges National Monument and eastward to Bluff. *Astragalus monumentalis* occurs in similar habitats but is apparently restricted to the Cedar Mesa Formation from Fry Canyon (a tributary of White Canyon) westward along the Cedar Mesa Formation to where that formation dips beneath younger strata west of the Colorado River in Garfield Co., Utah, and northward to the Needles area of Canyonlands National Park.

The species is named in honor of Dr. Walter P. Cottam, botanical collector, plant ecologist, and teacher.

The altered *A. monumentalis* represents a more discrete entity with the exclusion of the specimens which form *A. cottamii*. A description and list of specimens of *A. monumentalis* is provided for comparison.

Astragalus monumentalis Barneby *Leafl. West. Bot.* 7: 35. 1953.

Perennial herb with taproot (sometimes flowering the first season) and branching caudex; stems 1-6 cm. long, ascending; stipules 2-4 mm. long, membranous, clasping but not connate around the stem; leaves 1.5-8(11) cm. long, with persistent petioles; leaflets (5) 9-17(21), 2-9

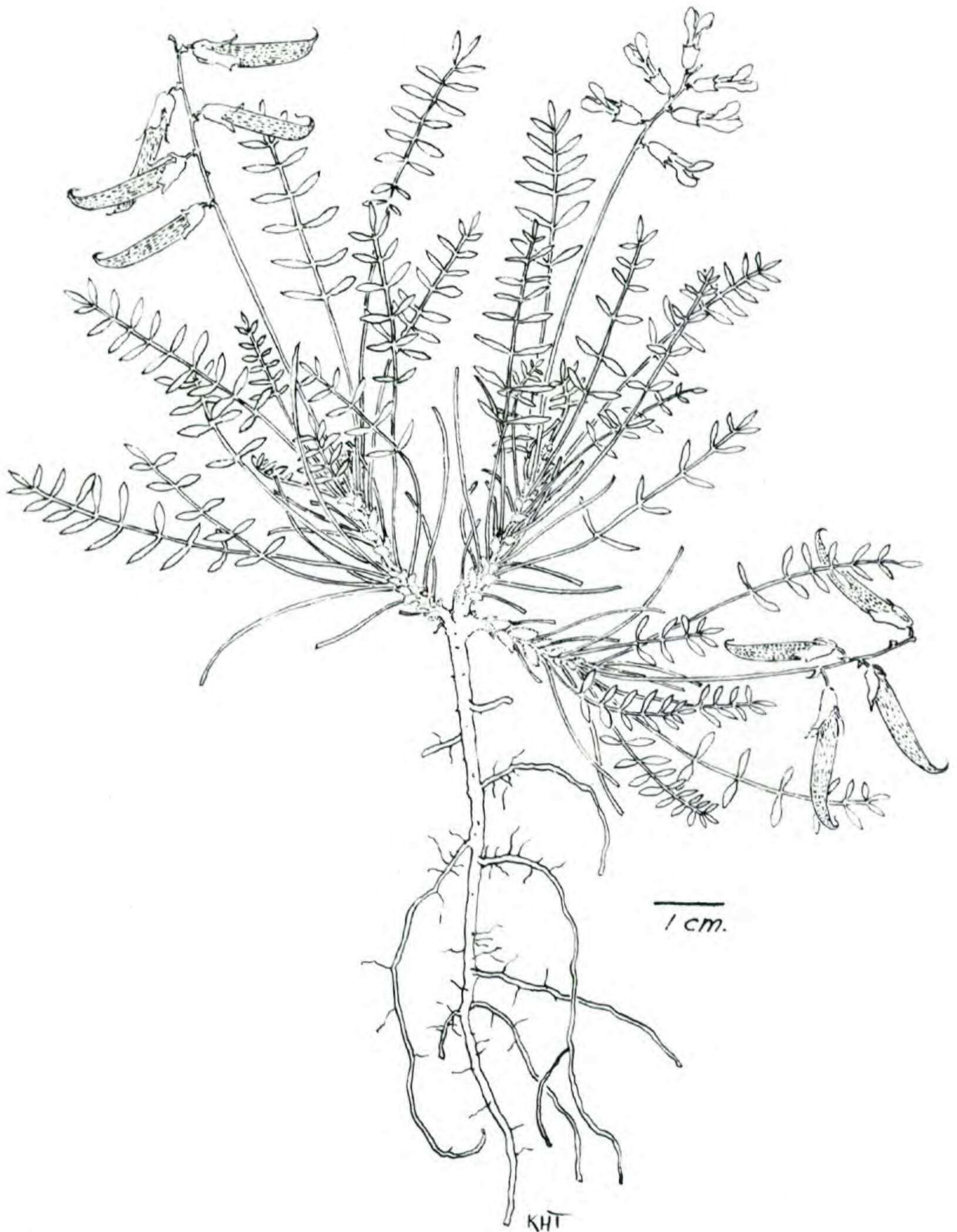


Figure 3. *Astragalus monumentalis* Barneby, habit.

mm. long, 1-4 mm. broad, oval to obovate, elliptic, or oblanceolate, strigulose with simple hairs, often folded; peduncles 1-12 cm. long; racemes 3- to 9- flowered, the rachis 0.5-7 cm. long in fruit; bracts longer than the pedicels; bracteoles lacking; calyx tube campanulate 3-3.5 mm. long, strigulose,

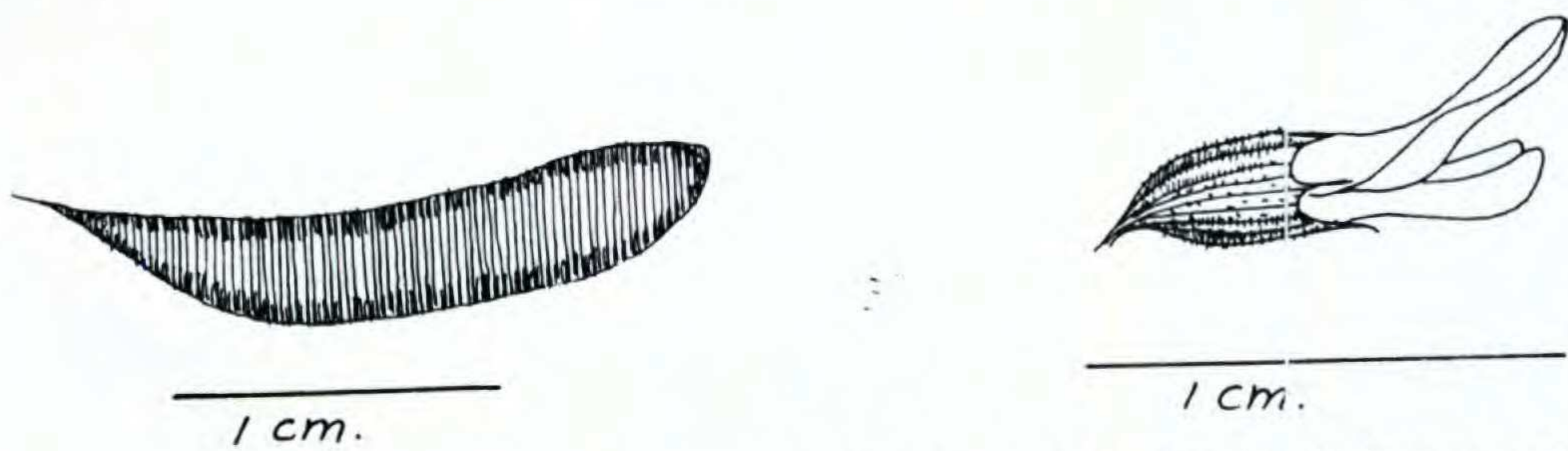


Figure 4. *Astragalus monumentalis* Barneby, detail of flower and fruit.

purplish-tinged, the teeth 0.5-1 mm. long, triangular; flowers 8-9 mm. long, the petals pink-purple; pods 12-21 mm. long 2.3-3 mm. broad, straight to curved, triangular in cross-section, the ventral suture prominent, the dorsal deeply sulcate, 2-loculed by intrusion of dorsal suture, greenish or purplish-mottled, strigulose.

UTAH: SAN JUAN CO.; White Canyon, ca. 25 miles southwest of Hite, *B. F. Harrison* 11595, 18 May 1950 (BRY, Iso-type). Fry Canyon, *S. L. Welsh* 5191, 29 April 1966 (BRY, \pm Topotype). Ca. 8 miles west of Fry Canyon, *S. L. Welsh* 5212, 1 May 1966 (BRY). Canyonlands National Park; Virginia Park, *G. Moore* 307, 14 May 1965 (BRY), Squaw Flat, *G. Moore* 348, 348a, 15 May 1965 (BRY), *S. L. Welsh et al* 2954, 1 June 1964 (BRY), Chesler Park, *S. L. Welsh et al* 2901, 1 June 1964 (BRY), west side of Elephant Hill, *S. L. Welsh et al* 2888, 31 May 1964 (BRY), vicinity of Silver Stairs, *S. L. Welsh* 7030, 15 May 1968 (BRY). GARFIELD CO.: west side of Colorado River Bridge near Hite, *Welsh* 5214, 1 May 1966 (BRY), *S. L. Welsh and G. Moore* 7122, 28 May 1968 (BRY).

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LITERATURE CITED

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